

DETAILED ACTION

Amendment and Request for Continued Examination filed on 2/17/10 have been acknowledged and entered.

Priority

Acknowledgment is made of applicant's claim for foreign priority based on 5 different foreign applications. It is noted, however, that applicant has not filed a certified copy of any of the applications as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 68-75, 79, 80, 81, 84-88, and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carpier et al. (US 6568600 B1) in view of Gray (US 6634565).

Regarding claims 68 and 69, Carpier teaches an IC module, comprising: an antenna coil (66 and 67) having antenna terminals (660, 661, 670, and 671); a substrate for the IC module (50c); an IC chip (3) mounted on the substrate for the IC module (Fig. 5A) and having antenna terminals (Fig. 5A); and a contact terminal plate (1C) mounted on the substrate for the IC module and having a plurality of contact terminals (Fig. 5C); and said IC module includes a contact terminal CE1 (22) and a contact terminal CE2 (23) connected to the antenna terminals of the IC chip, wherein said terminals CE1 and CE2 of the contact terminal plate are adapted to be connected to the antenna terminals

of the antenna coil (Fig. 5A, 5C); and a pair of U-shaped circuits (antennas 66 and 67 are U-shaped circuits) are formed so as to surround the IC chip on a surface of the substrate for the IC module opposite a surface of the substrate for the IC module on which the contact terminal plate is mounted in a manner where the IC chip is placed at a center portion of an area surrounded by the pair of U-shaped circuits (Fig. 5A), the contact terminals CE1 and CE2 being connected to the U-shaped circuits, respectively, and the U-shaped circuits being connected to the antenna terminals of the IC chip, respectively (Fig. 5C).

Carpier lacks that the plurality of contact terminals conform to the ISO 7816 standard.

Gray teaches an IC module with a plurality of contact terminals, including extra contact terminals wherein the plurality of contact terminals includes terminals C1-C8 conforming to ISO 7816 standard (Fig. 5), wherein said contact terminal CE1 (C9) is disposed between said terminal C1 and said terminal C5 among said eight contact terminals C1-C8, and said contact terminal CE2 (C13) is disposed between said terminals C4 and C8 among eight contact terminals C1-C8.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the contact pad set up as taught by Gray because it allows for a wider range of functions to be incorporated into the IC card (Col. 2 Lines 3-8).

Regarding claim 70, Carpier in view of Gray teaches the IC module according to claim 68, as shown above. Carpier further teaches wherein the contact terminals CE1

and CE2 are those to be connected to an antenna coil formed in a SIM holder in an IC card holder (Abstract, Fig. 5A).

Regarding claims 71, 72, and 79, Carpier in view of Gray teaches the IC module according to claim 68, as shown above. Carpier further teaches wherein the antenna terminals of the IC chip are connected to the contact terminals CE1 and CE2 by wire bonding (Col. 1 Lines 25-34) via through holes (220, 230), and the terminals of the IC chip other than the antenna terminals which are connected to the U-shaped circuits are connected to the connecting pads placed on the surface of the substrate for the IC module on which the U-shaped circuits are formed (Fig. 5C).

Regarding claim 73, Carpier in view of Gray teaches the IC module according to claim 68, as shown above.

Carpier does not teach using the ISO 7816, ISO 14443, and USB standards.

Carpier teaches, in another embodiment, using the ISO 7816 standard and ISO 14443 standard in a communication card (Col. 2 Lines 1-8)

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use the ISO 7816 and ISO 14443 standards because it means the card will be able to be used with a very wide range of standard card readers.

Gray teaches a card with a USB contact interface (Fig. 7).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to provide a USB interface with the card because it allows for a much more versatile and useful card (Col. 2 Lines 3-8).

Regarding claim 74, Carpier in view of Gray teaches the IC module according to claim 68, as shown above. Carpier further teaches wherein antenna-terminal plates are connected to said antenna-terminal plates of the IC chip, and said antenna-terminal plates are adapted to be connected to antenna-terminals of the antenna coil (Fig. 5A).

Regarding claim 75, Carpier in view of Gray teaches an IC card comprising an IC module according to claim 68, and a card holding the IC module (Abstract).

Regarding claim 80, Carpier in view of Gray teaches the IC module according to claim 79, as shown above. Carpier further teaches wherein the U-shaped circuits are connected to an antenna coil formed in a card (U-shaped circuits are used as antenna coil and therefore are connected to an antenna coil - Fig. 5A).

Regarding claim 81, Carpier in view of Gray teaches the IC module according to claim 79 as shown above. Carpier further teaches wherein the U-shaped circuits are connected to the contact terminals not used for contact communication among the plurality of contact terminals (terminals 22 and 23 are used for contactless communication).

Regarding claim 84, Carpier in view of Gray teaches the IC module according to claim 79, as shown above. Carpier further teaches wherein the U-shaped circuits are connected to antenna terminals of the IC chip by wire bonding (Col. 1 Lines 25-34) (Fig. 1).

Regarding claim 85, Carpier in view of Gray teaches the IC module according to claim 79, as shown above. Carpier further teaches wherein the U-shaped circuits are

connected to contact terminals CE1 (23) and CE2 (22), the contact terminals being connected to antenna terminals of the IC chip (Fig. 5A, 5C).

Regarding claims 86 and 87, Carpier in view of Gray teaches the IC module according to claim 85, as shown above. Carpier further teaches wherein the U-shaped circuits are connected to the contact terminals CE1 and CE2 via through holes, respectively (230 and 220) and by wire bonding (Col. 1 Lines 25-34).

Regarding claim 88, Carpier in view of Gray teaches the IC module according to claim 85, as shown above. Carpier further teaches wherein the contact terminals CE1 and CE2 are those to be connected to an antenna coil formed in a SIM holder or an IC card holder (Abstract, Fig. 5A).

Regarding claim 90, Carpier in view of Gray teaches an IC card comprising an IC card module according to claim 79 (abstract of Carpier).

2. Claims 76-78 and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carpier as modified by Gray and in further view of Jigour et al. (US 5815426). The teachings of Carpier as modified by Gray have been discussed above.

Regarding claims 76-78 and 89, Carpier as modified by Gray teaches the IC module according to the claims above. Carpier further teaches wherein the contact terminals CE1 and CE2 are those to be connected to an antenna coil formed in a module holder (Fig. 5A)

Carpier lacks the IC module being part of a SIM card/holder.

Jigour teaches an IC module as part of a SIM card (Fig. 4), and wherein one or some of a half-length photograph, a name and a number are printed on a surface of the

SIM base opposite a surface of the SIM base on which the contact terminal plate is mounted (Col. 7 Lines 22-29).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use the IC module described by Carpier as modified by Gray with the SIM card set up of Jigour because it would allow the IC module to be used in a wider range of applications. For example, the card could be used in a mobile phone if it were a SIM card. Further, placing graphics on the card would allow for more customization or for advertising by the card supplier.

3. Claims 82 and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carpier as modified by Gray and in further view of Fidalgo (US 5598032). The teachings of Carpier as modified by Gray have been discussed above.

Regarding claims 82 and 83, Carpier in view of Gray teaches the IC module according to claim 81, as shown above.

Carpier lacks connecting the U-shaped circuits to terminals C4 and C8.

Fidalgo teaches wherein the U-shaped circuits (antennas 5 are U-shaped – Fig. 2) are connected to terminals C4 and C8 (Fig. 8), and wherein the U-shaped circuits are connected to the terminals C4 and C8 via through holes (Col. 3 Lines 40-53).

Therefore it would have been obvious to one of ordinary skill in the art to connect the U-shaped antennas to terminals C4 and C8 because it allows the card to be used in a contactless mode while using ISO standard 7816, thus making the card more versatile.

Response to Arguments

Applicant's arguments filed 2/17/10 have been fully considered but they are not persuasive.

Applicant argues that element 50C of Carpier is not "a substrate for an IC module", however this argument is not found to be persuasive. Describing the substrate as "for an IC module" is still fairly broad. For example, the substrate 50C of Carpier is "for an IC module" in the sense that the IC module is supported (whether directly or indirectly) by the substrate 50C. Therefore, this argument is not found to be persuasive.

Applicant argues that semiconductor component 3 of Carpier is not placed at a center portion of an area surrounded by the pair of U-shaped circuits, however this argument is not found to be persuasive. The area between the leads of the antennas (66 and 67) could be interpreted as "an area surrounded by the pair of U-shaped circuits" because the area between leads has the U-shaped circuits on either side. The IC chip is placed in this area, and therefore the arguments are not found to be persuasive.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAFFERTY KELLY whose telephone number is (571)270-5031. The examiner can normally be reached on Mon. - Fri. 800-1730 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rafferty Kelly/
Examiner, Art Unit 2876
4-13-10

/Michael G Lee/
Supervisory Patent Examiner, Art Unit 2876